

**STATE WATER CONTROL BOARD ENFORCEMENT ACTION**

**SPECIAL ORDER BY CONSENT**

**ISSUED TO**

**ALEXANDRIA SANITATION AUTHORITY**

**FOR**

**ASA ADVANCED WASTEWATER TREATMENT PLANT**  
**(VPDES PERMIT NO. VA0025160)**

**SECTION A: Purpose**

This is a Consent Special Order issued under the authority of Va. Code §§ 62.1-44.15(8a) and 10.1-1185 between the State Water Control Board and Alexandria Sanitation Authority regarding the Authority's advanced wastewater treatment plant for the purpose of resolving certain alleged violations of the State Water Control Law and Regulations.

**SECTION B: Definitions:**

Unless the context clearly indicates otherwise, the following words and terms have the meaning assigned to them below:

1. "Va. Code" means the Code of Virginia (1950), as amended.
2. "Board" means the State Water Control Board, a permanent citizens' board of the Commonwealth of Virginia as described in Va. Code §§ 62.1-44.7 and 10.1-1184.
3. "Department" or "DEQ" means the Department of Environmental Quality, an agency of the Commonwealth of Virginia as described in Va. Code §§ 10.1-1183.

4. “Director” means the Director of the Department of Environmental Quality.
5. “Order” means this document, also known as a Consent Special Order.
6. “ASA” means the Alexandria Sanitation Authority which is a public authority created by the City Council of Alexandria in 1952 under the Virginia Water and Waste Authorities Act, Va. Code § 15.2-5102, for the purpose of acquiring, constructing, improving, extending, operating, and maintaining a sewer system and sewage disposal systems for the City of Alexandria. ASA is responsible for selling its own bonds and charging users for services.
7. “STP” or “facility” means the ASA Advanced Wastewater Treatment Plant.
8. “NVRO” means the Northern Virginia Regional Office of DEQ, located in Woodbridge, Virginia.
9. “Permit” means Virginia Pollutant Discharge Elimination System Permit No. VA0025160. The Permit was reissued on January 20, 2004, and expires on January 19, 2009.

#### **SECTION C: Findings of Fact and Conclusions of Law**

1. ASA owns and operates the STP which is located on a 33-acre site in the City of Alexandria. The STP provides sewage treatment for a 51-square mile area including Alexandria, as well as neighboring parts of Fairfax County. The STP’s Permit authorizes discharges of treated wastewater to Hunting Creek in the Potomac River Basin at a rate of 54 million gallons a day (“MGD”).
2. The Board has evidence which it alleges indicates that ASA has violated VPDES Permit Regulation 9 VAC 25-31-50.A for exceedences of Permit effluent limits for phosphorus in August through November 2003 and February 2004; and total suspended solids in September through November 2003, and February 2004. DEQ NVRO issued Notices of Violation (“NOV”) for those exceedences as follows: NOV No. W2003-10-N-0005 issued October 23, 2003; NOV No. W2003-11-N-0003 issued November 21, 2003; NOV No. W2003-12-N-0002 issued December 15, 2003; NOV No. W2004-01-N-0002 issued January 15, 2004; and NOV No. W2004-04-N-0001 issued April 5, 2004.
3. On December 30, 1998, the Circuit Court of the City of Richmond entered an amended Consent Decree (“Decree”) in the case of *State Water Control Board v. Alexandria*

*Sanitation Authority.* The purpose of the Decree was to provide ASA with a compliance schedule for designing and constructing extensive upgrades to the STP that would ensure the STP's consistent compliance with Permit effluent limits established by the 1996 Policy for the Potomac River Embayments and achieve an annual average total nitrogen goal of 8 mg/l. The Decree also provided interim effluent limits for BOD, TSS, phosphorus, ammonia, and pH until July 1, 2002. The Decree anticipated that ASA would have completed a sufficient portion of the upgrades by July 1, 2002, for the STP to comply with final Permit effluent limits at that time and also to achieve the average annual total nitrogen goal in 2003.

4. According to ASA, space constraints inherent in rebuilding the STP on a limited footprint in competition with the needs of its contractors have complicated ASA's ability to perform operation and maintenance at the STP. Because of the ongoing construction of the upgrades, the STP was unable to meet all of the Decree's interim effluent limits in 2001 and 2002. As a consequence, the facility was designated in significant noncompliance ("SNC") on the EPA's Quarterly Noncompliance Report for biochemical oxygen demand and ammonia for those two years.
5. Although ASA was scheduled to complete construction of the upgrades in July 2002, the Authority was delayed, in part, because of several construction-related disruptions, including a fire at the facility, and events related to 9/11/01, which the ASA claimed as *force majeure* events. Events of 9/11 occasioned delays in delivery of parts and equipment for the facility because suppliers were filling emergency orders for the Pentagon. Pursuant to the Decree, the STP's final Permit effluent limits became effective in July 2002. Because of the construction delay, the STP was unable to meet carbonaceous biochemical oxygen demand and ammonia final effluent limits in the third and fourth quarter of 2002.
6. In December 2002, ASA placed the STP's new BNR treatment system in service and achieved compliance with final Permit effluent limits for ammonia and carbonaceous biochemical oxygen demand in January 2003. ASA states that it undertook extraordinary measures to bring the BNR system on-line in December 2002 despite *force majeure* events and difficulties with contractor performance. According to the Authority, it spent over \$4.5 million dollars beyond expected contract costs to hire a contractor to set up and operate a temporary waste activated sludge thickening and dewatering facility because the STP's sludge handling facilities were not yet completed and the temporary facility was necessary to bring the BNR system on-line.
7. The STP exceeded Permit effluent limits for ammonia and phosphorus in February 2003 and for total suspended solids and phosphorus in March 2003 because of high flows due to wet weather conditions. The STP met all Permit effluent limits from April through July

2003.

8. In August 2003, the STP exceeded the weekly concentration and loading averages for phosphorus because of a construction-related leak from a newly installed valve in a caustic feed line. In September 2003, Hurricane Isabelle, as well as the storm that followed on the heels of the Hurricane, caused the STP's clarifiers to become hydraulically overloaded. ASA attempted to treat all of the incoming flow despite flow rates as high as 120 MGD coming into the STP for several hours. The hydraulic overload caused some activated sludge from the secondary clarifiers to washout, overwhelming the tertiary clarifiers and fouling the filters which, in turn, caused solids and phosphorus exceedences.
9. The construction projects for the STP upgrades are enormous in scope and are being accomplished in phases under six separate contracts. The estimated cost of the entire project is \$340,000,000. Although ASA has finished construction of the STP's BNR treatment system and spent approximately \$280,000,000 to date, an additional 60 million dollars worth of construction has yet to be completed. In the meantime, according to ASA, the STP has been unable to consistently meet final Permit effluent limits for total suspended solids and phosphorus because of the ongoing construction.
10. The STP is designed so that at least five of six clarifiers must be on-line at any given time. ASA completed construction of the fifth clarifier in May 2002 but the equipment failed. ASA delayed repairing the fifth clarifier and completing the sixth clarifier until it could determine the cause of the equipment failure and identify a solution to the problem. In an effort to ensure reliable operation of the two new secondary clarifiers as quickly as possible, ASA negotiated a change order with the prime contractor and assumed responsibility for contracting directly with the equipment manufacturer. At the same time, the STP's effluent polishing filter system underwent rehabilitation, and many of the filters were taken off-line. The STP's design requires that 20 of 22 filters be on-line at any given time and these filters are critical to achieving compliance with TSS and phosphorus Permit effluent limits.
11. According to ASA, the lack of adequate secondary settling capacity and available filters during the fall of 2003 and the winter of 2004 resulted in solids carryover from the secondary system that was beyond the treatment capacity of the tertiary clarifier and effluent polishing filters. As a consequence, the STP exceeded TSS and phosphorus Permit effluent limits, particularly during episodes of high flows. During the spring of 2004, ASA completed modifications to the fifth and sixth clarifiers and the upgrade of the STP's filter system, including constructing new filters and rehabilitating existing ones. At this time all six clarifiers are online, as are the full complement of polishing filters.

12. ASA is expected to complete construction of two new sludge digesters in late 2005. In the meantime, ASA is retrofitting two existing digesters. The ongoing digester construction work may cause additional problems with the STP's performance that may result in Permit effluent limit exceedences. The final phase of the upgrade is scheduled to be completed in February 2006.
13. The STP complied with all final Permit effluent limits during December 2003 and January 2004. In addition, the STP more than achieved the annual average total nitrogen goal of 8 mg/l and has consistently met ammonia and CBOD effluent limit since completing installation of the BNR system in December 2002. In February 2004, the STP exceeded the Permit effluent limits for TSS and for phosphorus. The STP complied with all final Permit effluent limits in March, April, and May 2004, except for a slight exceedence in April of the weekly solids loading limit.
14. On February 20, 2004, ASA submitted to DEQ a proposed Scope of Work which provides for ASA's procuring the services of a wastewater treatment expert to objectively assess the STP's overall operations, identify potential compliance problems, and recommend specific measures for improving operations to enable the STP to achieve the best possible performance during the final phase of construction.
15. DEQ met with ASA representatives on March 2, 2004, to discuss ASA's plan for ensuring the STP's consistent compliance with Permit effluent limits during the final phases of the upgrade's construction. During the meeting, ASA and DEQ agreed that the 1998 Decree had served its purpose and that DEQ would pursue termination of the Decree through the Office of the Attorney General. In addition, ASA agreed to submit a plan and schedule for completing the final phases of the upgrade's construction. The plan and schedule have been incorporated into Appendix A of this Order, as well as the requirement that ASA procure the services of a wastewater treatment expert as outlined in the Scope of Work. Appendix A requires that ASA complete construction of the final phase of the upgrade by February 2006. Appendix B provides interim effluent limits for TSS, CBOD<sub>5</sub>, and phosphorus until the upgrades is completed.

#### **SECTION D: Agreement and Order**

Accordingly the Board, by virtue of the authority granted it in Va. Code § 62.1-44.15(8a), orders Alexandria Sanitation Authority, and Alexandria Sanitation Authority agrees without admitting that it has violated any federal or state law, to perform the actions described in Appendices A and B of this Order.

#### **SECTION E: Administrative Provisions**


1. The Board may modify, rewrite, or amend the Order with the consent of ASA for good cause shown by ASA or on its own motion after notice and opportunity to be heard.
2. This Order addresses and resolves those violations specifically alleged herein, including those matters addressed in the NOV's issued on October 23, November 21, and December 15, 2003, and January 15 and April 5, 2004 as described above in item two of Section C. This Order shall not preclude the Board or the Director from taking any action authorized by law, including but not limited to: (1) taking any action authorized by law regarding any additional, subsequent, or subsequently discovered violations; (2) seeking subsequent remediation of the facility as may be authorized by law; or (3) taking subsequent action to enforce the Order. This Order shall not preclude appropriate enforcement actions by other federal, state, or local regulatory authorities for matters not addressed herein.
3. Solely for purposes of this Order and subsequent actions with respect to this Order, ASA admits the jurisdictional allegations but does not admit the factual findings, and conclusions of law contained herein.
4. ASA consents to venue in the Circuit Court of the City of Richmond for any civil action taken to enforce the terms of this Order.
5. ASA declares it has received fair and due process under the Administrative Process Act, Va. Code § 2.2 - 4000 *et seq.*, and the State Water Control Law, and it waives the right to any hearing or other administrative proceeding authorized or required by law or regulation, and to any judicial review of any issue of fact or law contained herein. Nothing herein shall be construed as a waiver of the right to any administrative proceeding for, or to judicial review of, any action taken by the Board to enforce this Order.
6. Failure by ASA to comply with any of the terms of this Order shall constitute a violation of an order of the Board. Nothing herein shall waive the initiation of appropriate enforcement actions or the issuance of additional orders as appropriate by the Board or the Director as a result of such violations. Nothing herein shall affect appropriate enforcement actions by any other federal, state, or local regulatory authority.
7. If any provision of this Order is found to be unenforceable for any reason, the remainder of the Order shall remain in full force and effect.
8. ASA shall be responsible for its failure to comply with any of the terms and conditions of this Order unless compliance is made impossible by earthquake, flood, other acts of God, war, strike, or such other occurrence. ASA shall show that such circumstances were

- b. the projected duration of any such delay or noncompliance;
- c. the measures taken and to be taken to prevent or minimize such delay or noncompliance; and
- d. the timetable by which such measures will be implemented and the date full compliance will be achieved.

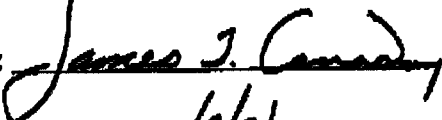
Failure to so notify the Regional Director within five days of learning of any condition above, which ASA intends to assert will result in the impossibility of compliance, shall constitute a waiver of any claim to inability to comply with a requirement of this Order.

- 9. This Order is binding on the parties hereto, their successors in interest, designees and assigns, jointly and severally.
- 10. This Order shall become effective upon execution by both the Director or his designee and ASA. Notwithstanding the foregoing, the ASA agrees to be bound by any compliance date, which precedes the effective date of this Order.
- 11. This Order shall continue in effect until the Director or the Board terminates the Order in his or its sole discretion upon 30 days written notice to ASA. Termination of this Order, or any obligation imposed in this Order, shall not operate to relieve ASA from its obligation to comply with any statute, regulation, permit condition, other order, certificate, certification, standard, or requirement otherwise applicable.
- 12. By its signature below, ASA voluntarily agrees to the issuance of this Order.

And it is so ORDERED this day of September 2, 2004.

  
Robert G. Burnley, Director *in*  
Department of Environmental Quality

Alexandria Sanitation Authority voluntarily agrees to the issuance of this Order.

By:   
Date: 7/8/04


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Commonwealth of Virginia  
City/County of Alexandria

The foregoing document was signed and acknowledged before me this 8<sup>th</sup> day of

July, 2004 by James T. Cranday, who is  
(name)

Engineer - District of Alexandria Sanitation Authority on behalf of Alexandria  
Sanitation Authority.  
(title)

  
\_\_\_\_\_  
Notary Public

My commission expires: April 30, 2006



**APPENDIX A**  
**SCHEDULE OF COMPLIANCE**

Alexandria Sanitation Authority shall:

1. By February 1, 2006, complete construction of the upgrade in accordance with approved plans and specifications;
2. By April 1, 2006, achieve compliance with final Permit effluent limits; and
3. Pending completion of the upgrade, operate the existing STP in a manner that produces the best quality effluent of which it is capable in order to minimize any additional exceedences of the STP's final or interim effluent limitations and impacts to water quality that may occur while the upgrade is under construction.

## APPENDIX B

### INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

#### ALEXANDRIA SANITATION AUTHORITY

#### ASA ADVANCED WASTEWATER TREATMENT PLANT

During the period beginning with the effective date of this Order and lasting until the Permit compliance deadline in the schedule provided under item two in Appendix A of this Order, Alexandria Sanitation Authority shall limit the discharge from outfall 001 at the Facility in accordance with the VPDES Permit No. VA0025160, except as specified below. These interim limits shall retroactively apply, if applicable, as of the first day of the month in which this Order becomes effective. These requirements shall be construed in light of the Board's Permit Regulation.

PARAMETER	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
	<u>Monthly Average</u>		<u>Weekly Average</u>		<u>Minimum</u>	<u>Maximum</u>	<u>Frequency</u>	<u>Sample Type</u>
TSS	12 mg/l	2450 kg/d	18 mg/l	3674 kg/d	N/A	N/A	1/D	24HC
CBOD <sub>5</sub>	10 mg/l	2041 kg/d	15 mg/l	3062 kg/d	NA	NA	1/D	24HC
Phosphorus	0.4 mg/l	81 kg/d	0.6 mg/l	122 kg/d	N/A	N/A	1/D	24HC

N/A = Not Applicable

N/L = No Limit

1/D = Once per day

24HC = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the monitored 24-hour period.